

(12) UK Patent Application (19) GB (11) 2 245 639 A (13)
(43) Date of A publication 08.01.1992

(21) Application No 9014560.8

(22) Date of filing 29.06.1990

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(51) INT CL⁵

F16B 2/08, B65B 7/12, B65D 63/10, F16L 3/13

(52) UK CL (Edition K)

E2A AGM A311 A314 A316 A414
U1S S1775 S1789

(56) Documents cited

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(58) Field of search

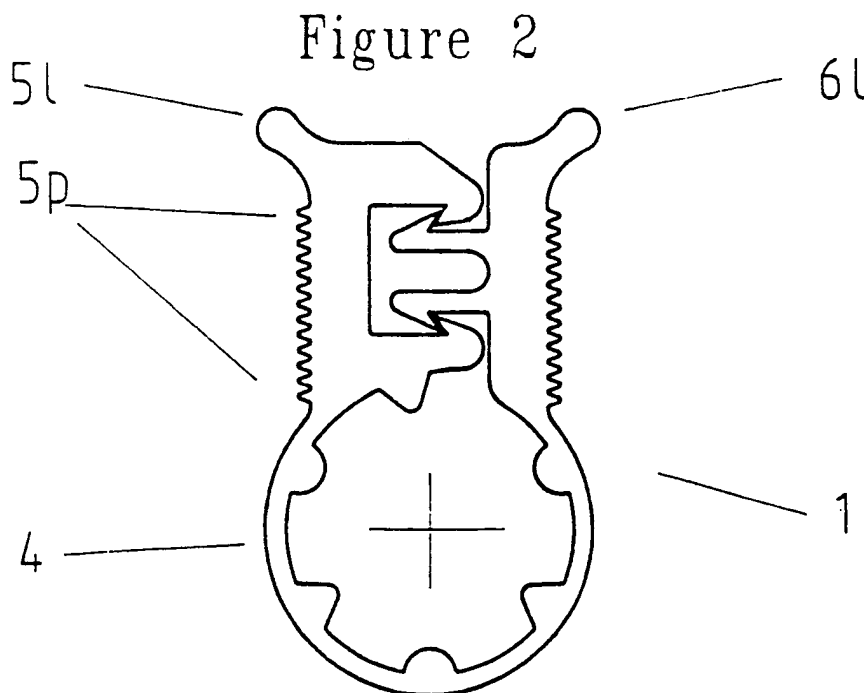
UK CL (Edition K) E2A AGD AGF AGM
INT CL⁵ B65B, B65D, F16B, F16L

(54) Snap fastening clamp band

(57) A clip e.g for sack neck fastening comprising a "C" shaped plastic moulded clip 1, having a plurality of lobes 2 & 3, formed on the inner periphery of the clip band 4, has a snap lock action releasable clasp means 5 & 6, comprising an external pair of inward facing barbs 5b, on one end, and a mating internal pair of outward facing barbs 6b, on the other end of the clip 1.

The clasp means 5 & 6, embodies pre-formed finger grip lugs 51 & 61, and/or pressure pads 5p & 6p, to facilitate locking by squeezing the lugs 51 & 61, or pads 5p & 6p, together by the thumb and forefinger of the user. The finger pressure pads 5p & 6p, are serrated 5s & 6s, to prevent slipping.

The clasp means 5 & 6, is releasable (for-use) by twisting the lugs 51 & 61. The shape of the lobes 3 & 3, includes semi-circular, rectangular, triangular and trapezoidal shapes with and/or without fillets and/or chamfers, and the elasticity of the clip band 4, is so provided that the clip 1, is normally sprung wide open, ready for use.



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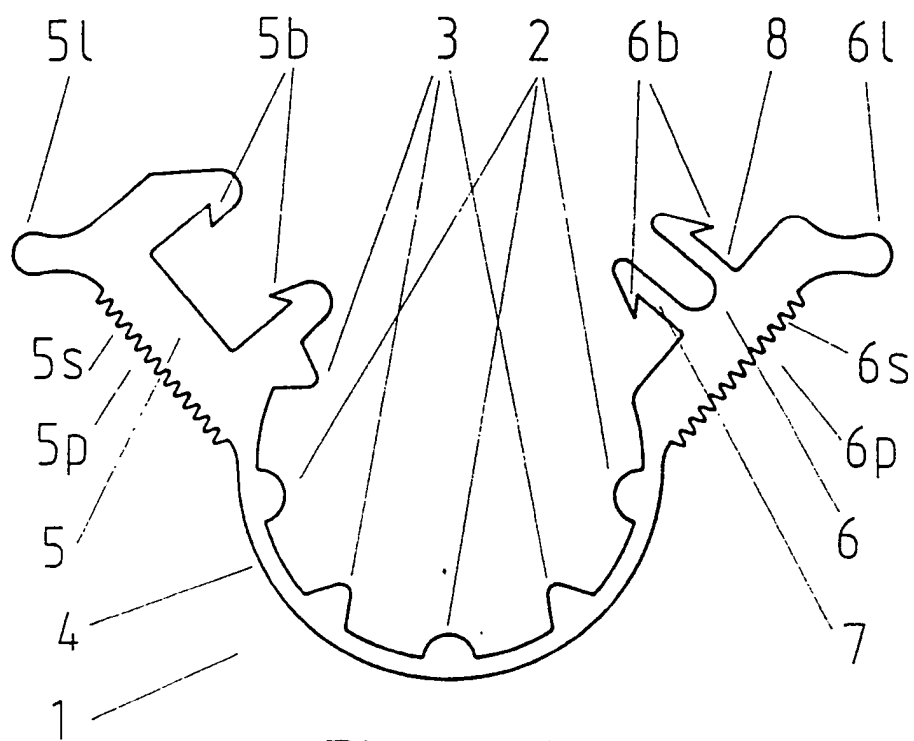


Figure 1

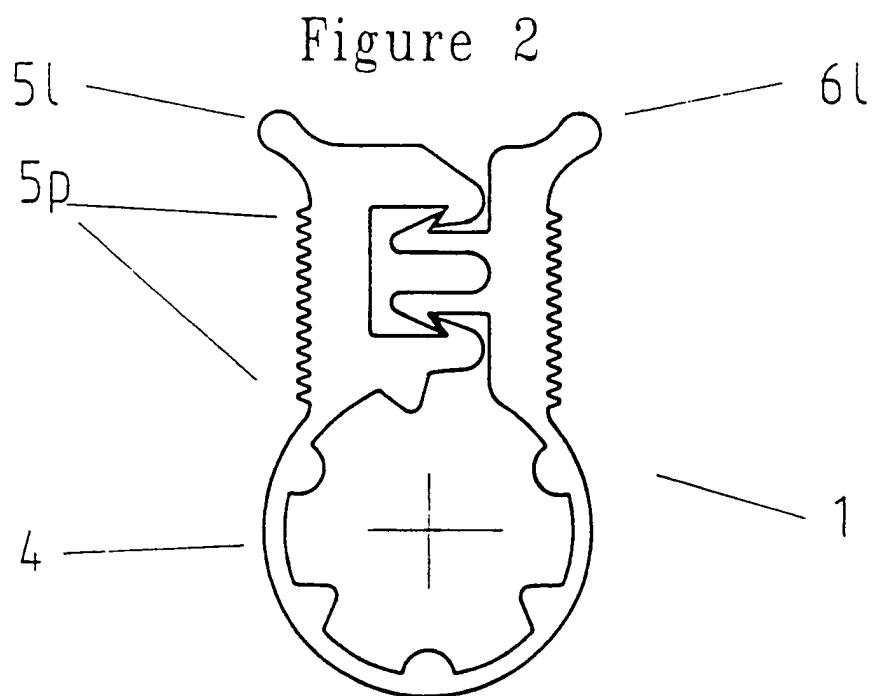


Figure 2

SACK NECK CLIP

The present invention relates to an inexpensive re-usable plastic (injection moulded) sack neck clip for sealing and securing the twisted neck of a polythene (or other material) sack, efficiently, quickly with a snap locking action, executed by the finger and thumb of one hand with a minimum of physical force and dexterity and a minimum of damage to the sack or user.

Furthermore, the clip which is securely locked when closed, can be quickly and easily unlocked by a simple axial twisting force using finger and thumb and reused over and over again without damage to itself or the sack or the user.

The invention is also adaptable for numerous other applications, including securing and tidying loose cables together in automotive and other wiring installations.

PRIOR ART

Although numerous devices exist to seal and secure sack necks, most of these suffer from drawbacks which are outlined below.

Certain metal sack neck clips require a special tool which is expensive and may not be around when needed. The clips being metal are expensive and often dangerous because of sharp metal ends and are subject to corrosion, rusting, and associated health hazards.

Wire closure ties requiring twisting together are sometimes dangerous as they have sharp ends and are also awkward to handle, requiring a third hand or significant dexterity to use efficiently. Also wire ties are too time consuming when large numbers of sacks are involved.

Flat V-shaped plastic sack neck clips rely on a wedge action to seal the sack and cannot be uniform as the sealing pressure at the apex of the wedge is greater than the sealing force away from it. Also V-clips will not accept too much twisting of the sack neck. Twisting the sack neck is perhaps the most effective way of effecting an air tight seal of the sack.

Although "C" shaped plastic clips exist, they are intended mainly for heavy duty applications; such as hose pipe clamping. They are not suitable for polythene sack neck sealing (or securing), as the internal periphery or bore is smooth and slips without gripping the sack neck. These clips also require considerable physical effort (with pliers) to ensure effective locking of the ends and are not cost effective.

PATENT SEARCH - A patent search has revealed no prior art with embodiments covered by claims 1 & 2 of this patent application, particularly the "lobes" and the snap lock action clasp means.

OBJECT

The object of the present invention is to overcome the above mentioned drawbacks by providing a releasable reusable inexpensive sack neck clip with a quick snap locking action, which can be easily held and operated by the finger and thumb of one hand, with a minimum of physical force and dexterity and a minimum of damage to the sack or user.

This is attained by the snap locking action clasp means, with dual pairs of mating barbs and the embodiment of lobes (on the inner periphery of the band of the "C" clip) which have the dual function of gripping the twisted neck of the sack securely thus minimising slip, as well as being able to accept a wider range of sack sizes and thicknesses by providing spaces between the lobes for extra sack neck material to squeeze into.

A specific embodiment of the invention will now be described by way of example with reference to the accompanying drawings in which:-

FIGURE 1 is an illustration of the sack neck clip in the "normally sprung wide open" position ready to accept the twisted neck of a sack.

FIGURE 2 is an illustration of the sack neck clip with the clasp fully locked or mated; i.e. the position of the clip when the twisted neck of a sack is secured inside the clip band.

DESCRIPTION

Referring to figures 1 & 2, the present invention comprises a "C" shaped plastic moulded clip, 1, embodying a plurality of lobes, 2 & 3, formed on the inner periphery of the clip band 4, together with a releasable clasp means, 5 & 6, embodied at the two ends of the clip, 1.

The said clasp means 5 & 6 comprise an external pair of inward facing barbs (or pawls), 5b, on one end of the clip, 1, and a mating internal pair of outward facing barbs (or pawls), 6b, on the other end of the clip, 1.

The said clasp means 5 & 6 embodies pre-formed finger grips lugs, 5l & 6l and/or pressure pads 5p & 6p to facilitate said clasp means 5 & 6 to be mated or locked by squeezing the said lugs 5l and 6l and/or pads 5p & 6p together, by the thumb and forefinger of the user.

The said mating barbs 5b & 6b of said clasp means 5 & 6 is releasable by opposite axial pressure on the opposite sides of said lugs 5l & 6l or by a twisting action on the said lugs 5l & 6l with a finger and thumb of the user. The shape of the said lobes, 2 & 3, includes semi-circular, rectangular, triangular and trapezoidal shapes with and/or without fillets, and/or chamfers.

The elasticity of the plastic moulded clip is preferably so provided that the clip, 1, is normally sprung wide open, (see figure 1) to facilitate fitting around the twisted neck of a sack. Preferably the thickness of the limbs 7 & 8 of the said internal barbs (or pawls), 6b, are so provided that a minimum of physical effort is required to latch the clasps together, whilst at the same time ensuring adequate strength.

When the locked clasp means 5 & 6 (see figure 2) is required to be unlocked, an opposite axial pressure on the lugs 5l and 6l (produced by a twisting action between the user's finger and thumb pressure) will cause the barbs 5b & 6b, to slide out and release the clasp means 5 & 6. Preferably the finger pressure pads 5b & 6b, are provided with serrations 5s & 6s, to inhibit slipping of the user's finger and/or thumb.

CLAIMS:

1. A sack neck Clip comprising a "C" shaped plastic moulded clip embodying a plurality of lobes formed on the inner periphery of the clip band, together with a snap lock action releasable clasp means embodied at the two ends of the clip.
2. A sack neck clip as in claim 1 wherein said clasp means comprises an external pair of inward facing barbs (or pawls) on one end of the clip and a mating internal pair of outward facing barbs (or pawls) on the other end of the clip.
3. A sack neck clip as in claims 1 and 2 wherein said clasp means embodies pre-formed finger grip lugs and/or pressure pads to facilitate said clasp means to be mated or engaged by squeezing said lugs and/or pads together by the thumb and forefinger of the user.
4. A sack neck clip as in claims 3 wherein said finger grip lugs and/or pressure pads are serrated to inhibit slipping of the users fingers off the ends.
5. A sack neck clip as in above claims 1, 2, 3, and 4, wherein said mating barbs of said clasp means is releasable for re-use by opposite axial pressure on the sides of said lugs.
6. A sack neck clip as in claims 1, 2, 3, 4, and 5 wherein the shape of said lobes includes semi-circular, rectangular, triangular and trapezoidal shapes with and/or without fillets and/or chamfers.
7. A sack neck clip as in any of the above claims wherein the elasticity of the plastic moulded clip is so provided that the clip is normally sprung wide open to facilitate fitting around the twisted neck of a sack.
8. A sack neck clip as in any of the above claims wherein the said clip is mass produced by plastic injection moulding using injection moulding polymers.
9. A sack neck clip as in claim 8 wherein the said injection moulding polymer is polypropylene and/or polyethylene, and/or any grade of nylon, and/or acetal.

10. A clip as in all the above claims, adapted for use in other applications such as tidying and securing loose cables together for automotive and other wiring installations.

11. A sack neck clip substantially as described herein with reference to and as illustrated in the accompanying drawings.